

Overview of materials for Acrylonitrile Butadiene Styrene (ABS), Transparent, Molded

Category : Polymer , Thermoplastic , ABS Polymer , Acrylonitrile Butadiene Styrene (ABS), Transparent, Molded

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Acrylonitrile Butadiene Styrene (ABS), Transparent, Molded". Each property range of values reported is minimum and maximum values of appropriate MatWeb entries. The comments report the average value, and number of data points used to calculate the average. The values are not necessarily typical of any specific grade, especially less common values and those that can be most affected by additives or processing methods.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Overview-of-materials-for-Acrylonitrile-Butadiene-Styrene-ABS-Transparent-Molded.php

Physical Properties	Metric	English	Comments
Density	1.05 - 1.16 g/cc	0.0379 - 0.0419 lb/in ³	Average value: 1.09 g/cc Grade Count:40
Water Absorption	0.300 - 1.00 %	0.300 - 1.00 %	Average value: 0.575 % Grade Count:6
Moisture Absorption at Equilibrium	0.350 - 0.700 %	0.350 - 0.700 %	Average value: 0.450 % Grade Count:5
Viscosity	350000 - 600000 cP @Temperature 220 - 220 °C	350000 - 600000 cP @Temperature 428 - 428 °F	Average value: 475000 cP Grade Count:2
Linear Mold Shrinkage	0.00300 - 0.0140 cm/cm	0.00300 - 0.0140 in/in	Average value: 0.00582 cm/cm Grade Count:27
Melt Flow	0.300 - 45.0 g/10 min	0.300 - 45.0 g/10 min	Average value: 15.9 g/10 min Grade Count:42

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	78.0 - 116	78.0 - 116	Average value: 107 Grade Count:31
Ball Indentation Hardness	70.0 - 95.0 MPa	10200 - 13800 psi	Average value: 80.0 MPa Grade Count:5
Tensile Strength, Ultimate	29.0 - 51.0 MPa	4210 - 7400 psi	Average value: 39.7 MPa Grade Count:14
Tensile Strength, Yield	30.4 - 55.9 MPa	4410 - 8110 psi	Average value: 44.4 MPa Grade Count:35
Elongation at Break	10.0 - 70.0 %	10.0 - 70.0 %	Average value: 32.7 % Grade Count:30
Elongation at Yield	3.50 - 6.00 %	3.50 - 6.00 %	Average value: 4.33 % Grade Count:12
Modulus of Elasticity	1.90 - 2.06 GPa	276 - 299 ksi	Average value: 1.98 GPa Grade Count:9
Flexural Yield Strength	47.1 - 92.2 MPa	6830 - 13400 psi	Average value: 67.2 MPa Grade Count:34

Mechanical Properties	Metric	English	Comments
	1.51 - 2.76 GPa	70.0 - 100 ksi	Average value: 2.09 GPa Grade Count:36
Izod Impact, Notched	0.0981 - 3.04 J/cm	0.184 - 5.70 ft-lb/in	Average value: 1.24 J/cm Grade Count:36
	0.600 - 1.30 J/cm @Temperature -30.0 - 0.000 °C	1.12 - 2.44 ft-lb/in @Temperature -22.0 - 32.0 °F	Average value: 0.875 J/cm Grade Count:2
	0.600 - 1.30 J/cm @Thickness 3.17 - 3.17 mm	1.12 - 2.44 ft-lb/in @Thickness 0.125 - 0.125 in	Average value: 0.875 J/cm Grade Count:2
Izod Impact, Unnotched	0.392266 - 0.392266 J/cm @Temperature -30.0 - -30.0 °C	0.734875 - 0.734875 ft-lb/in @Temperature -22.0 - -22.0 °F	Average value: 0.392 J/cm Grade Count:1
	0.392266 - 0.392266 J/cm @Thickness 3.20 - 6.40 mm	0.734875 - 0.734875 ft-lb/in @Thickness 0.126 - 0.252 in	Average value: 0.392 J/cm Grade Count:1
Charpy Impact Unnotched	5.10 - 18.0 J/cm ²	24.3 - 85.7 ft-lb/in ²	Average value: 11.7 J/cm ² Grade Count:6
	7.00 - 12.0 J/cm ² @Temperature -30.0 - -30.0 °C	33.3 - 57.1 ft-lb/in ² @Temperature -22.0 - -22.0 °F	Average value: 8.60 J/cm ² Grade Count:5
Charpy Impact, Notched	0.500 - 1.40 J/cm ²	2.38 - 6.66 ft-lb/in ²	Average value: 0.850 J/cm ² Grade Count:8
	0.200 - 0.700 J/cm ² @Temperature -30.0 - -20.0 °C	0.952 - 3.33 ft-lb/in ² @Temperature -22.0 - -4.00 °F	Average value: 0.283 J/cm ² Grade Count:6

Thermal Properties	Metric	English	Comments
CTE, linear	80.0 - 121 µm/m-°C	44.4 - 67.2 µin/in-°F	Average value: 103 µm/m-°C Grade Count:9
Maximum Service Temperature, Air	75.0 - 90.0 °C	167 - 194 °F	Average value: 86.0 °C Grade Count:5
Deflection Temperature at 0.46 MPa (66 psi)	80.0 - 94.0 °C	176 - 201 °F	Average value: 91.1 °C Grade Count:10
Deflection Temperature at 1.8 MPa (264 psi)	65.0 - 96.0 °C	149 - 205 °F	Average value: 83.3 °C Grade Count:31
Vicat Softening Point	86.0 - 106 °C	187 - 223 °F	Average value: 95.1 °C Grade Count:15
Glass Transition Temp, Tg	107 °C	225 °F	Average value: 107 °C Grade Count:3

UL RTI Electrical Thermal Properties	Metric 50.0 - 60.0 °C	English 122 - 140 °F	Comments Average value: 52.7 °C Grade Count:7
UL RTI, Mechanical with Impact	50.0 - 60.0 °C	122 - 140 °F	Average value: 52.7 °C Grade Count:7
UL RTI, Mechanical without Impact	50.0 - 60.0 °C	122 - 140 °F	Average value: 52.7 °C Grade Count:7
Flammability, UL94	HB - V-2	HB - V-2	Grade Count:30

Optical Properties	Metric	English	Comments
Refractive Index	1.52 - 1.54	1.52 - 1.54	Average value: 1.53 Grade Count:4
Haze	1.70 - 11.0 %	1.70 - 11.0 %	Average value: 3.88 % Grade Count:22
Transmission, Visible	78.0 - 90.0 %	78.0 - 90.0 %	Average value: 87.1 % Grade Count:36

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+11 - 1.00e+16 ohm-cm	1.00e+11 - 1.00e+16 ohm-cm	Average value: 1.38e+15 ohm-cm Grade Count:8
Surface Resistance	1.00e+11 - 1.00e+15 ohm	1.00e+11 - 1.00e+15 ohm	Average value: 4.52e+14 ohm Grade Count:9
Dielectric Constant	2.80 - 3.00	2.80 - 3.00	Average value: 2.88 Grade Count:5
Dielectric Strength	7.00 - 37.0 kV/mm	178 - 940 kV/in	Average value: 26.0 kV/mm Grade Count:3
Dissipation Factor	0.0130 - 0.0160	0.0130 - 0.0160	Average value: 0.0148 Grade Count:5

Processing Properties	Metric	English	Comments
Processing Temperature	190 - 265 °C	374 - 509 °F	Average value: 223 °C Grade Count:5
Nozzle Temperature	200 - 260 °C	392 - 500 °F	Average value: 221 °C Grade Count:7
Adapter Temperature	235 - 245 °C	455 - 473 °F	Average value: 240 °C Grade Count:4
Die Temperature	113 - 118 °C	235 - 245 °F	Average value: 116 °C Grade Count:4
Melt Temperature	180 - 260 °C	356 - 500 °F	Average value: 222 °C Grade Count:16
Mold Temperature	40.0 - 90.0 °C	104 - 194 °F	Average value: 60.2 °C Grade Count:16
Injection Velocity	60.0 - 200 mm/sec	2.36 - 7.87 in/sec	Average value: 107 mm/sec Grade Count:3
Roll Temperature	75.0 - 95.0 °C	167 - 203 °F	Average value: 85.0 °C Grade Count:4
Drying Temperature	70.0 - 88.0 °C	158 - 190 °F	Average value: 77.4 °C Grade Count:11
Moisture Content	0.100 - 0.700 %	0.100 - 0.700 %	Average value: 0.500 % Grade Count:3

Processing Properties	Metric	English	Comments
Injection Pressure	4.83 - 150 MPa	700 - 21800 psi	Control Valve: 73.3 MPa Grade Count:10

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